Abstract

The invention provides compositions, kits, methods, and species that include electroactive entities which can serve as signaling entities in chemical and/or biochemical assays. The electroactive species can be metallocenes, such as ferrocenes, including substituents that affect the oxidation/reduction potential (redox potential) of the species. By controlling the redox potential of the species, multiple species can be used in a single assay, each species having a different redox potential, for simultaneous signaling of different binding events. Additionally, species having redox potentials lower than 490mV can be provided, allowing signaling within a potential range easily detectable in the presence of biological fluids.